

### REMARKS

The application has been carefully reviewed in light of the rejection dated September 8, 2006. Claims 14-23, 25-29, 42-48, 63-71, and 73-77 are withdrawn. Claims 24 and 72 are canceled. Claims 1-13, 30-41, and 49-62 are currently pending in this application. Applicant reserves the right to pursue the original claims and other claims in this and other applications.

Claims 1, 8-11, 30-32, 39-41, 52, and 59-62 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Mann et al., U.S. Patent No. 6,768,149 ("Mann"). This rejection is respectfully traversed.

Independent claims 1 and 30 each recite, *inter alia*, "the gate electrode having a length extending from a source/drain region to the photo-conversion device and comprising at least one gate region extending the length of the gate electrode and having a substantially uniform dopant type and concentration and a work-function greater than a work-function of n+ Si" (emphasis added). Similarly, independent claim 52 recites, *inter alia*, "the act of forming the gate electrode comprising forming the gate electrode having a length extending from a source/drain region to the photo-conversion device and forming at least one gate region extending the length of the gate electrode and having a substantially uniform dopant type and concentration and a work-function greater than a work-function of n+ Si" (emphasis added). Mann fails to disclose all limitations of claims 1, 8-11, 30-32, 39-41, 52, and 59-62.

Mann relates to "a sensor 100 having a photo-detector 102 and a transistor 104 acting as a reset switch." Mann at cols. 2:66-3:1. "The...transistor 302 has a gate 304, a source 306, and a drain 308. The drain 308 of the transistor 302 is connected to the deep implant 316 of photo-detector 310. The gate 304 has a n-type region 312, a p-

type region 314, and a dielectric insulator 316. Mann at col. 4:54-59. "The source 306 is formed with a p-type well 318, and partially beneath the n-type gate portion 312 of gate 304. Mann at col. 5:11-12. "The drain 308 is formed with the substrate 320 and partially beneath the p-type region 314 of the gate 304." Mann at col. 5:16-17. Therefore, each of the regions 312, 314 extends across only a portion of the length of the gate wherein the gate extends from the source to the drain. See Mann at FIG. 3. Further, the dopant type along the length of the gate which extends from the source to the drain is not substantially uniform. See Mann at FIG. 3. Accordingly, Mann does not disclose "at least one gate region extending the length of the gate electrode and having a substantially uniform dopant type," as recited by claims 1 and 30; or "forming at least one gate region extending the length of the gate electrode and having a substantially uniform dopant type," as recited by claim 52, wherein the length of the gate electrode is defined as "extending from a source/drain region to the photo-conversion device."

Since Mann does not disclose all limitations of independent claims 1, 30, and 52, claims 1, 30, and 52 and claims 8-11, 31-32, 39-41, and 59-62 depending respectively therefrom are patentable over Mann. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 2, 7, 12-13, 33, 38, 53, and 58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mann. This rejection is respectfully traversed.

Claims 2, 7, and 12 depend from claim 1. Claim 13 depends from claim 12, which depends from claim 1. Claims 33 and 38 depend from claim 30. Claims 53 and 58 depend from claim 52. As discussed above, Mann fails to disclose all limitations of independent claims 1, 30, and 52. For the same reasons that Mann does not anticipate independent claims 1, 30, and 52, Mann does not render claims 1, 30, and 52 obvious. The transistor disclosed in Mann has a gate with p and n-type regions 312, 314. See

Mann at FIG. 3. Each of the regions 312, 314 extends across only a portion of the length of the gate and as such the dopant type along the length of the gate is not substantially uniform, wherein the gate extends from the source to the drain. See Mann at FIG. 3. Accordingly, Mann does not teach or suggest "at least one gate region extending the length of the gate electrode and having a substantially uniform dopant type," as recited by claims 1 and 30 or "forming at least one gate region extending the length of the gate electrode and having a substantially uniform dopant type," as recited by claim 52, wherein the length of the gate electrode is defined as "extending from a source/drain region to the photo-conversion device."

Since Mann does not teach or suggest all limitations of independent claims 1, 30, and 52, claims 2, 7, 12-13, 33, 38, 53, and 58 depending respectively therefrom are patentable over Mann. Accordingly, withdrawal of this rejection is respectfully requested.

For at least these reasons, Applicant believes the pending application is in condition for allowance. Withdrawal of these rejections is respectfully requested.

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Respectfully submitted,

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